

2022-SEPT - IWA WORLD WATER CONGRESS & EXHIBITION

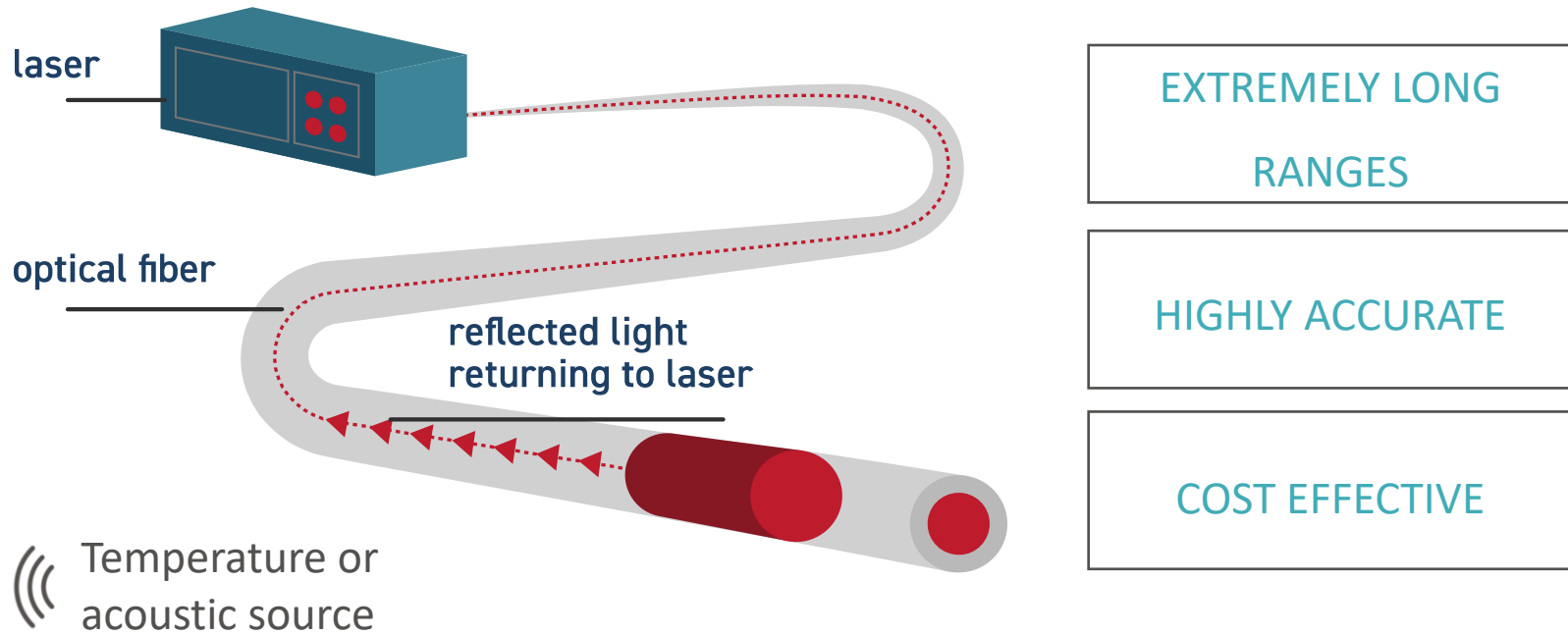
**RICK DE VISSCHER**, Managing Director Vigotec Pipe Systems  
**THIJS LANCKRIET**, Project Manager Fluves



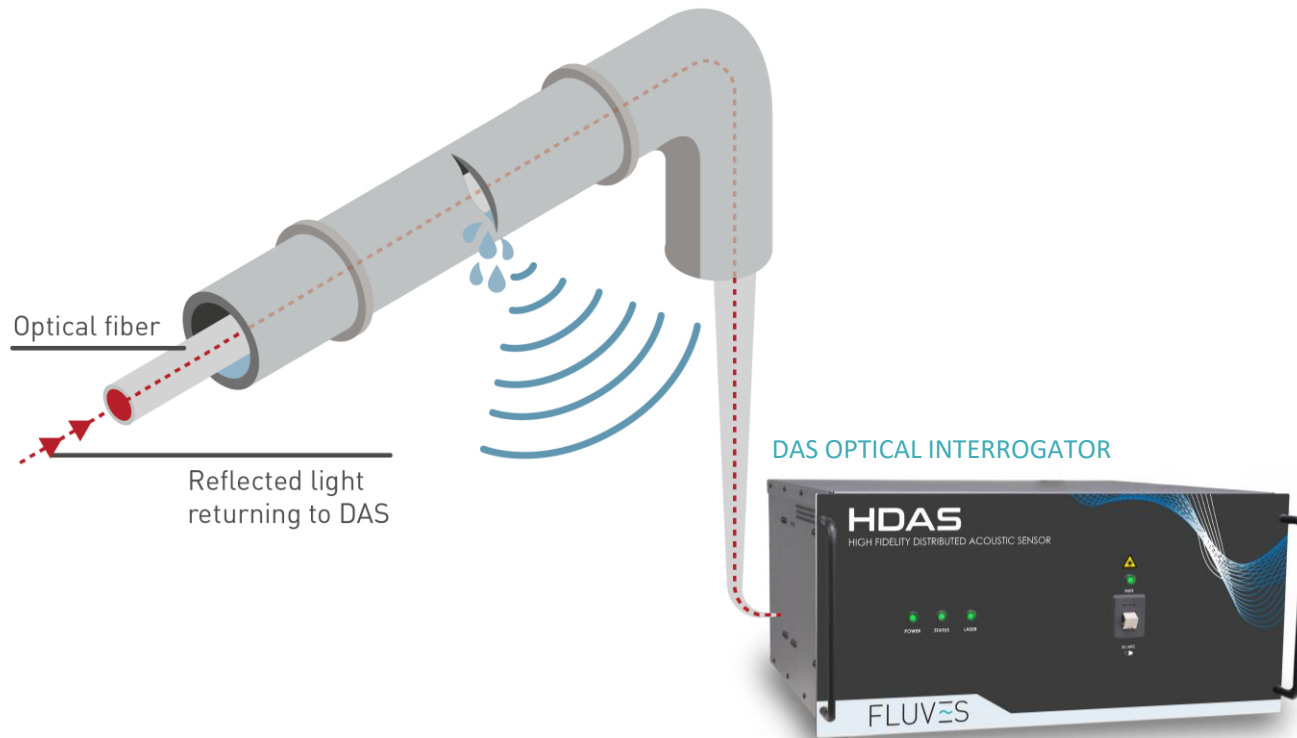
MONITORING LEAKS & INTRUSIONS  
EVERY METER, EVERY SECOND, 24/7  
ANY PIPE MATERIAL OR SIZE



## WHY FIBER OPTIC SENSING IS THE BEST SOLUTION TO MONITOR LEAKS AND INTRUSION IN UNDERGROUND PIPES



## THE DALI SYSTEM



MICRODUCT & CUSTOM FITTINGS

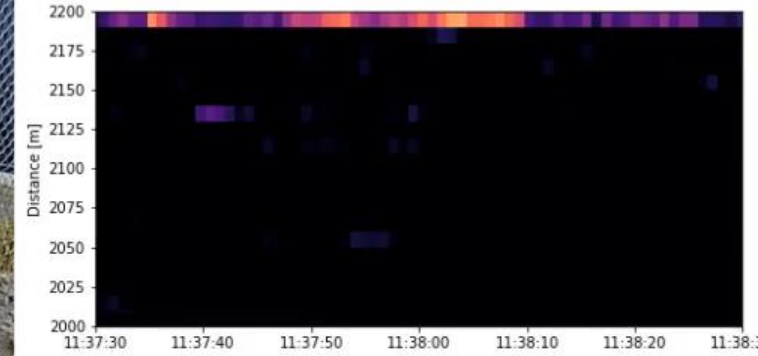
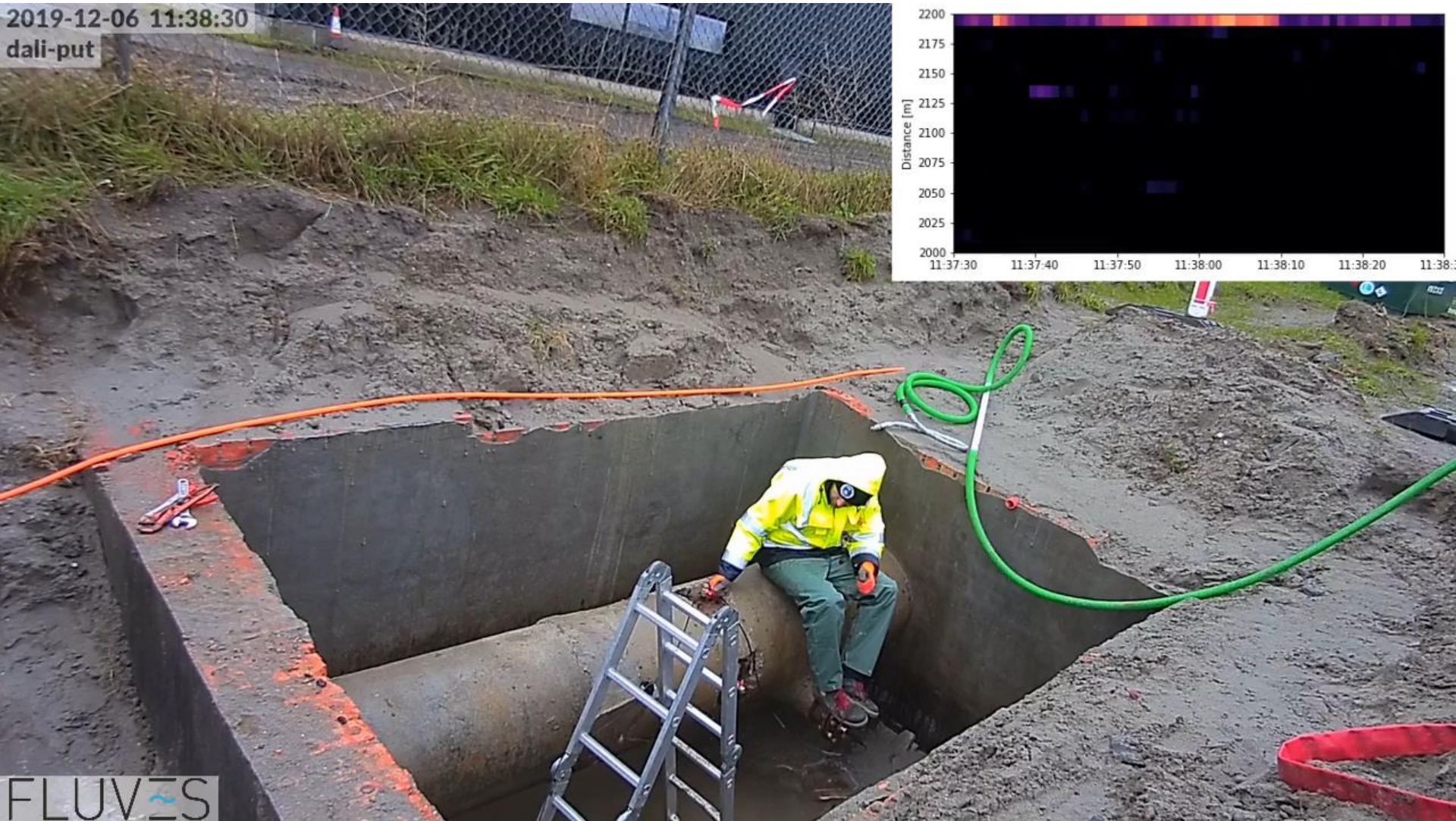


ONLINE DASHBOARD

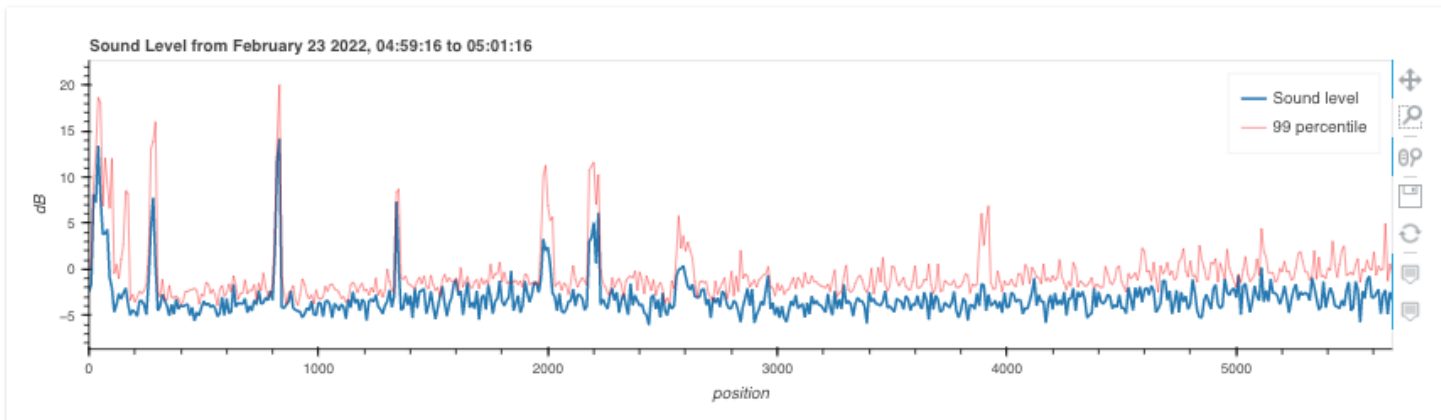


## DALI IN ACTION: LEAK

2019-12-06 11:38:30  
dali-put



## THE ONLINE DASHBOARD





## WHAT CAN DALI MONITOR?

### All applications

Water distribution networks

Water mains

District heating networks

Industrial pipe networks

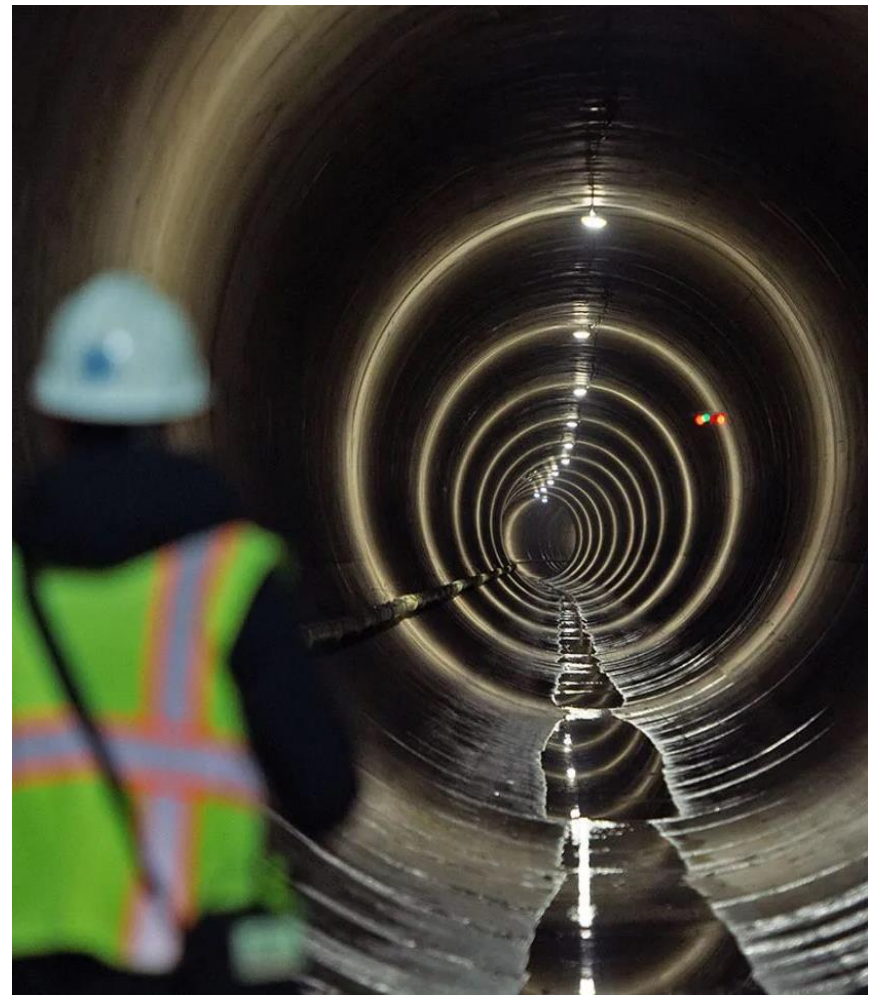
Sewage pipes

...

### Any pipe material

Concrete, steel, plastic (PE, PP, PVC),...

### Any diameter





## HOW CAN DALI BE DEPLOYED?

### 1. PERMANENT:

> Fiber and DAS are installed permanently for long-term 24/7 monitoring

*Best-suited for large-diameter and critical pipelines (long-distance transport)*

### 2. SEMI-PERMANENT:

> Fiber is placed permanently in the pipeline,

> DAS is connected periodically (e.g. quarterly)

*DAS can be leased instead of purchased, or it can be moved between assets*

### 3. SHORT-TERM leak detection:

> Fiber is inserted in the pipe until leak is localized, and then retracted

*Best suited for smaller pipes*

*Especially valuable for plastic pipes: no issues with sound damping!*

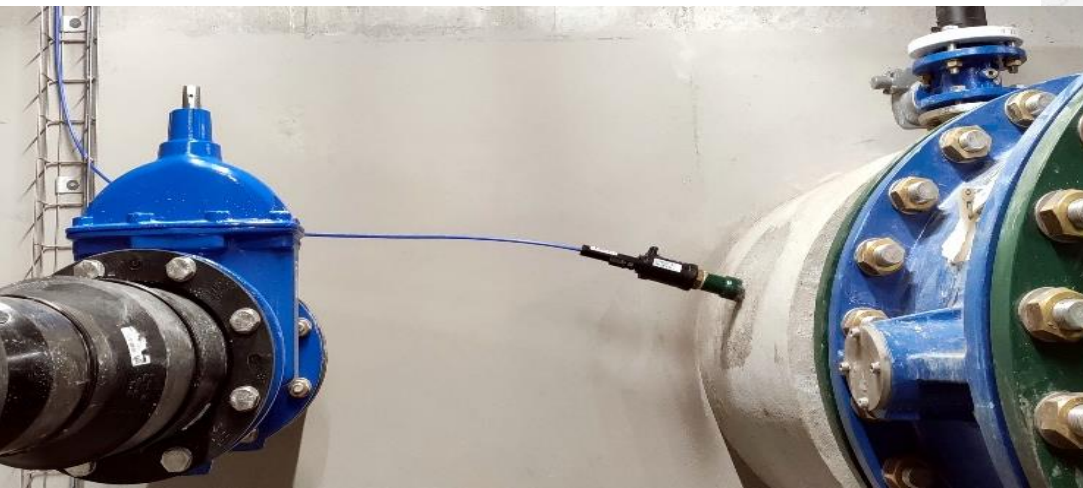
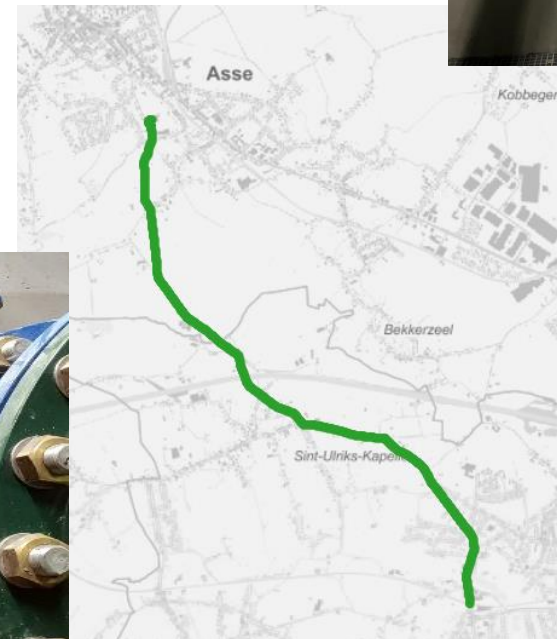
## CASE STUDY: SUCCESSFUL MONITORING OF LARGE TRANSPORT PIPELINES

CASE WITH  **FARYS** BELGIUM

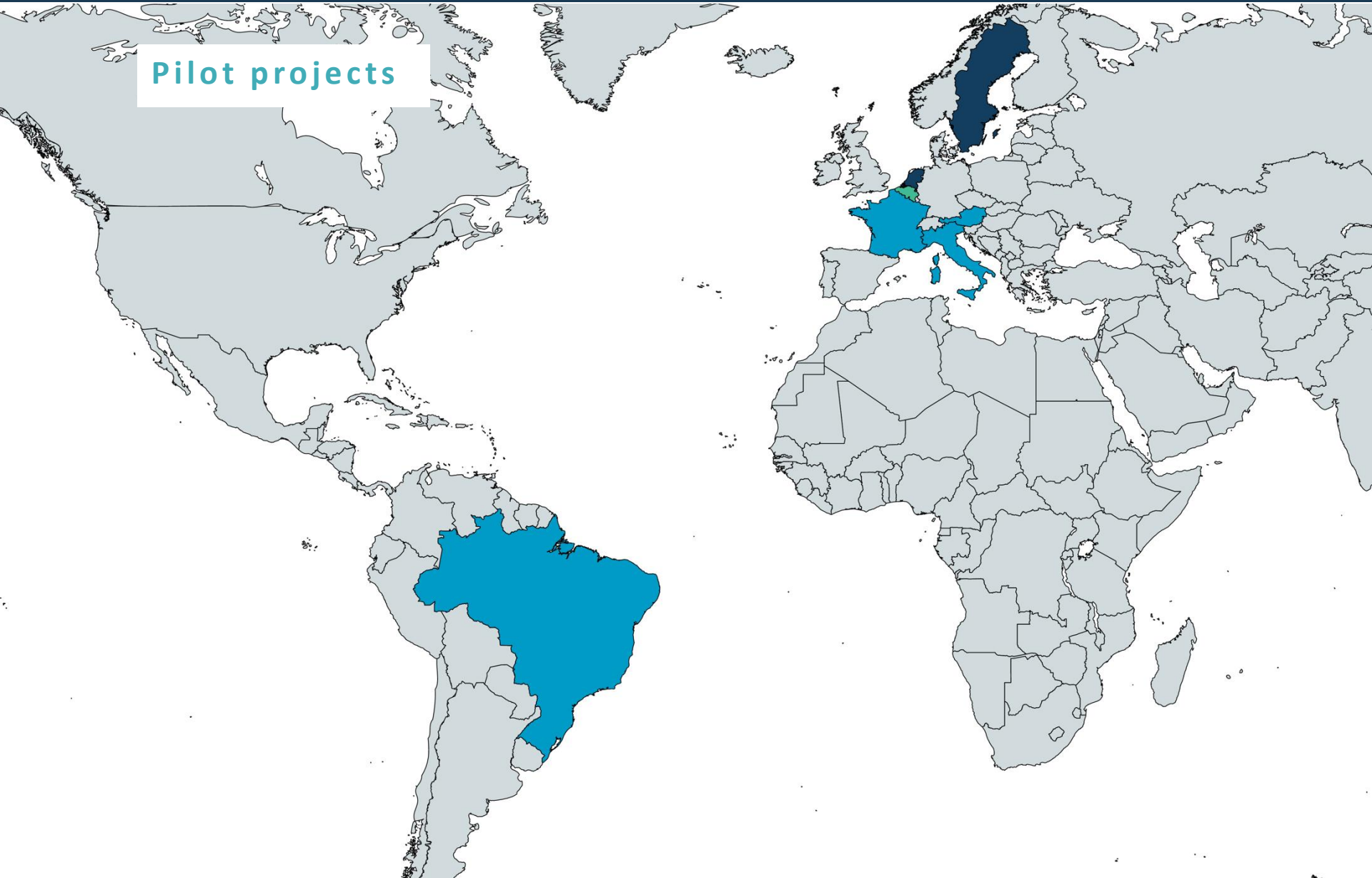
OPERATIONAL SINCE OCTOBER 2020

- 6 km, diameter 1000 mm, sidero-cement
- Multiple blind tests conducted successfully
- Valves & Operational pipeline deployment?

**IWA-launch: DALI Deployment System 2.0**



Pilot projects



## HOW WE WORK WITH YOU FROM ANALYSIS TO EXECUTION AND SERVICE

ANALYSIS

PREPARATION

INSTALLATION

IN OPERATIONS / SERVICING

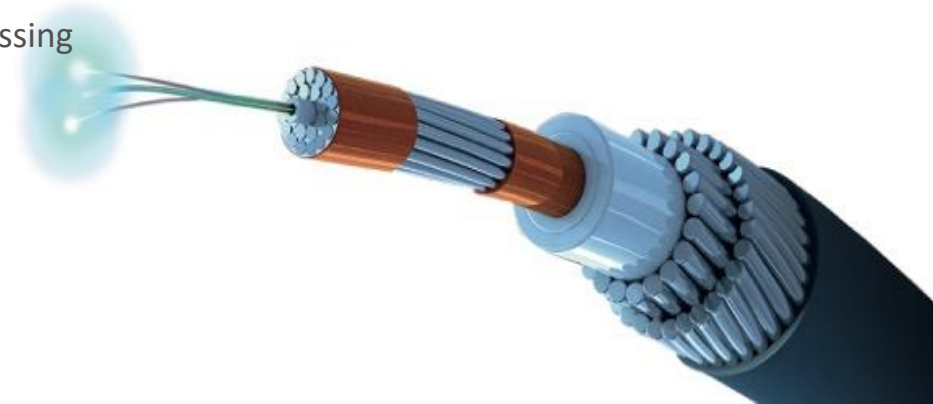
TECHNICAL SALES  
TEAM

### MULTIDISCIPLINARY ENGINEERING TEAM:

- Analyze technical parameters
- Customize for a smooth & safe deployment
- Continuously optimize data processing

### SERVICE TEAM:

Training and/or deployment





## WHAT DALI DELIVERS



**24/7** monitoring, every meter,  
any pipeline



**High accuracy** across long  
distances



**Real Time** alerts &  
intervention



**NRW**



**Asset & infrastructure risks**



**Maintenance**



**Pipe network lifetime**



**Synergies:**

- “Pipeline As A Service”: Fiber Backbone
- Smart Grid: Remote control assets

# LET'S TALK & DEMO

Rick De Visscher - Vigotec



Thijs Lanckriet - FLUVES



Bram De Jaegher - FLUVES



Stijn Van Hoey - FLUVES





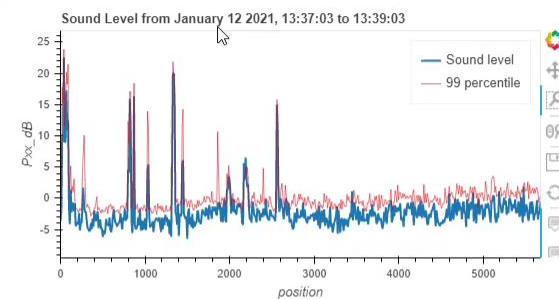
Extra slides



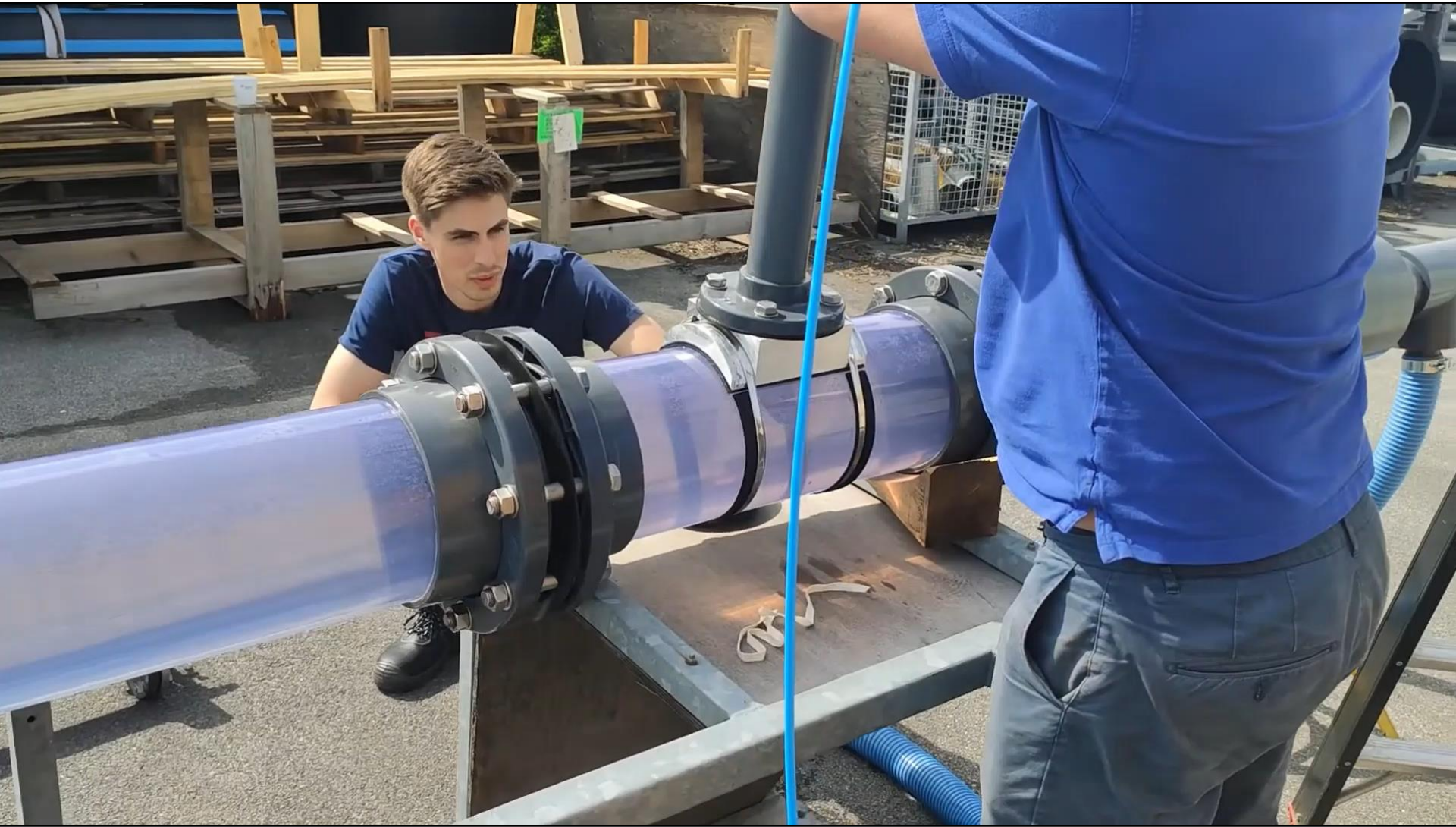
## VIDEO: DASHBOARD DEMO

### Asse Dilbeek

Farys



## DALI INSTALLATION SYSTEM



## DALI INSTALLATION SYSTEM REQUIREMENTS

- **Pipeline diameters:**
  - 90-400 mm: with 3 mm cable
  - 400-1200 mm: with 7 mm cable
  - > 1200 mm: possible, after testing
- **Pipeline material:**
  - All common materials are supported  
(cast iron, steel, concrete, sidero-cement, PE, PVC, ...)
- **Pressure:**
  - System is rated at PN16
- **Flow rate:**
  - A flow rate of 0.3 m/s should be generated during system installation (*a few hours*)
- **Valves must be bypassed**
  - At each valve, place an insertion and an extraction point (*e.g. by hot-tapping*).  
Opening diameter: DN65
  - Sufficient space is needed for installation and extraction tool (*site-dependent*)
- **Cable can be installed over sections of up to 2000m**
  - insertion/extraction point needed every 2000 m (*valve chamber, air vent chamber, ...*)
  - Number of bends + special points (*e.g. siphons*) must be known
- **Materials:**
  - All materials permanently in the pipeline are composed of materials with drinking water certification (*e.g. WRAS, Belgaqua, KIWA*)
  - All materials for the installation tooling have (at least) a food contact material certification (*e.g. FDA, EC1935/2004, ...*)